

Thirty years learning to improve rainwater and land management in the Blue Nile basin of Ethiopia

The Nile Basin Development Challenge (Nile BDC) is funded by the CGIAR Challenge Program on Water and Food (CPWF) to improve the resilience of rural livelihoods in the Ethiopian highlands through a landscape approach to rainwater management.

The first project of the Program reviewed past research and development experiences with sustainable land and water management in Ethiopia. This brief summarizes key points from the study – online at <http://mahider.cgiar.org/handle/10568/3317>.

The study approached the subject from a broadly historical perspective, tracing changes in policies and strategies from the 1970s to the present.

Broad areas of investment in the Blue Nile basin in the last thirty years mainly focused on land and water management, without explicit investment in rainwater management systems (RMS) - defined as interventions (technical, institutional, policy) that enable water to be captured, stored and efficiently utilized. This broadly includes soil and water conservation, sustainable land management, rainwater harvesting, conservation farming and micro irrigation management of water for crops, livestock, agroforestry and fish productivity.

Two broad concepts ...

The study is based on two broad concepts: The first is a 'landscape approach to rainwater management.' Like 'integrated watershed management' (IWM), it shares a systematic integrated systems paradigm. IWM, however, emphasizes hydrological boundaries while the landscape perspective considers broad social, economic and institutional networks that cut across hydrological boundaries. In the landscape approach, the aim of research is not necessarily to maximize the output of one element of the system, but to optimize the range of services of the entire watershed resource system.

The second is an 'innovation system' paradigm. Based around the notion of a 'learning platform,' the underlying idea is that to optimize the relevance and uptake of research results, research must be carried out from the beginning as a partnership of multiple stakeholders learning together.



Soil and water conservation through collective action in Michaw, Tigray, Ethiopia (Photo: Tilahun Amede)

Key messages ...

First of all, Ethiopia and its development partners have invested more in improving rainwater and land management than any other country in Africa.

In the past three decades, Ethiopia has adapted and improved its policies and implementation strategies. It has adopted participatory approaches, a livelihoods focus, and an integrated watershed management paradigm.

The launch of the SLM (Sustainable Land Management) Program increased awareness by government of the need to use water more productively (captured in the term, 'water-centered growth'), allied donor and development communities for collective investment and action, and initiated a holistic approach to natural resources management (NRM) in Ethiopia.

The Nile Basin Development Challenge capitalizes on the good experiences of the ongoing SLM Program and offers significant opportunities to create a new paradigm for sustainable land and water management.

Sustainable land and water management for improved livelihoods and systems is achieved when researchers closely work with communities to test and promote institutional and technological innovations on watersheds. The government needs to further strengthen policy support for sustainable demand-driven research-based rainwater management programs.

Ethiopia has a long history of large-scale research on sustainable land management. Three decades of research have produced a large body of knowledge on land degradation, the performance of various land management and soil water conservation technologies, soil and water conservation (SWC) interventions, the effectiveness of various implementation strategies, and the impacts of policies on incentives and productivity.

However, the results are often contradictory. There has been very little systematic comparative research on diverse SWC technologies, their performance, the conditions for which specific technologies are most appropriate, and accompanying crop, land and water management practices that enhance their productivity.

In general, water management practices and technologies, ways to improve the productivity of water used by crops, livestock and agroforestry, and the outcomes and social and economic impacts of these technologies are not well-researched in Ethiopia.

More broadly, implementation programs have rarely included an applied research component.

Today, the Ethiopian government has comprehensive and well-thought out policies to promote agricultural and rural development, water resources development, environmental conservation, and poverty reduction among others.

Historically however, sustainable land management programs were driven from the top and there is evidence that soil and water conservation structures promoted by government were often not perceived positively by farmers. There are many cases of inappropriate technologies being promoted, and the construction of structures that were not used. There are also excellent examples of community-owned and managed SLM that enabled communities to maintain and sustain the productivity of their agricultural systems.

In recent years, government programs, integrated rural development programs and NGOs all began to adopt a new approach to implementation. The lead program in this was MERET ('Managing Environmental Resources to Enable Transitions'), a three-decade collaboration of the World Food Program and the Ministry of Agriculture.



Soil and water conservation through collective action in Guba-Lafto district, Ethiopia. (Photo: Tilahun Amede)

While current approaches to promoting SLM are far more participatory and community-driven than in the past, there are still challenges and limitations.

- Programs tend to promote several 'best practice' packages with little recognition of the value of farmer knowledge and indigenous practices.
- Some SLM programs have not completed the transition from reducing land degradation as a goal to improving water and land management to increase and sustain productivity.
- There is no specific policy with regard to the management of rainwater – specifically so-called 'green water'. Managing water for productivity and ecosystem functions should start from rainfall and examine the entire continuum, from field level to large-scale infrastructure options.
- Many RWM programs had mixed outcomes, not because the technologies were not useful but that implementation was weak. Much implementation was not sufficiently linked to research.
- The national research system has been dominated by crop breeding, the identification of improved or new varieties, and soils research. Support to land and water management and RWM was very limited.

The Nile Basin Development Challenge (NBDC) is funded by the CGIAR Challenge Program on Water and Food (CPWF). It aims to improve the resilience of rural livelihoods in the Ethiopian highlands through a landscape approach to rainwater management. It comprises five linked projects examining: 1) Learning from the past; 2) developing integrated rainwater management strategies; 3) targeting and scaling out of rainwater management innovations; 4) assessing and anticipating the consequences of innovation in rainwater management systems; and 5) catalyzing platforms for learning, communication and coordination across the projects.

The NBDC is implemented by a consortium comprising the International Livestock Research Institute, International Water Management Institute, World Agroforestry Centre, Overseas Development Institute, Nile Basin Initiative, Stockholm Environment Institute, Ethiopian Economic Policy Research Institute, Catholic Relief Services – Ethiopia, Oromia Regional Research Institute, Amhara Agricultural Research Institute, Bahir Dar University, Ambo University, Nekemte University, the Ministry of Agriculture and the Ministry of Water and Energy.

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